MEASUREMENT OF NATIONAL IDENTITY IN CONFLICT ZONES USING FACTORIAL INVARIANCE

SMRUTI RANJAN DASH[1], DEBARGHYA BISWAS[2], DR. TRIPTI DESAI[3]

[1]ASSISTANT PROFESSOR, KALINGA UNIVERSITY, RAIPUR, INDIA.
[2]ASSISTANT PROFESSOR, KALINGA UNIVERSITY, RAIPUR, INDIA.
e-mail: ku.debarghyabiswas@kalingauniversity.ac.in,0009-0004-0730-9948
[3]PROFESSOR, NEW DELHI INSTITUTE OF MANAGEMENT, NEW DELHI, INDIA.,
e-mail: tripti.desai@ndimdelhi.org, https://orcid.org/0009-0002-1444-7316

ABSTRACT

Grasping the essence of national identity in conflict-affected regions is vital in shaping peacebuilding, governance, and reconciliation strategies. It, however, involves using traditional psychometric techniques which may not yield meaningful results across varying cultural and political contexts. This research investigates the national identity scale and its factorial invariance in regions impacted by conflict. It also seeks to find out whether the national identity construct is harmoniously comparable, considering "displaced citizens, ethnic minorities, and populations in militarized regions" using multigroup confirmatory factor analysis (MGCFA). 1,200 respondents from three geopolitical conflict areas were surveyed in regard to nation attachment, cultural affiliation, and civic pride. The findings suggest the existence of partial metric invariance, meaning that some shared underlying universe was unevenly contextualized, shaped by differing context-specific factors. This research strongly argues the need to rethink and refine strategies of post-conflict, or active-conflict, culturally sensitive regions. The results enhance the theoretical and practical aspects of conflict studies, particularly with regard to survey construction, policymaking, and identity-focused strategies.

Keywords: national identity, conflict zones, factorial invariance, MGCFA, measurement equivalence, civic pride, cultural belonging.

I. INTRODUCTION

A person's sense of belonging, loyalty, and participation within a nation-state is profoundly influenced by national identity. It includes emotional componentsthe feelings of attachment to the homelandas well as cognitive components, and as appreciation of its cultural and civic values [3]. In the context of stable societies, national identity is relatively constant and easily captured. However, areas of conflict characterized by displacement, interethnic strife, and state fragility make the measurement of national identity much more complicated and situated.

Conflict zones transform social systems, shift legitimacy frameworks, and identity averts national social systems. It is not unusual to witness a deep sense of patriotism alongside feelings of alienation, or a mixture of pride and resentment. This mixture of perceptions poses a challenge to psychometric national identity constructs designed to homogeneous politically stable societies [11]. Applying such constructs to conflict regions raises the question of measurement equivalence: whether the same construct is being measured in the same way across different groups [7]. Without establishing factorial invariance, any cross-group comparison is bound to be invalid or misleading.

Factorial invariance is a methodological criterion that ensures a construct has the same meaning across different populations [10].Levels include: the same factor structure as configurational invariance, same factor loadings as metric invariance, same item intercepts as scalar invariance, and strict invariance for the same residuals. The focus of this study is applying Multigroup Confirmatory Factor Analysis (MGCFA) to evaluate the factorial invariance of a nationally validated identity scale within three conflict-affected populations: Internally Displaced Persons (IDPs), minority ethnic groups, and residents of militarized regions [15].

The study goes beyond evaluating the identity validity and aims to advance culturally informed and ethically sound methodologies for data collection in sensitive conflict zones. This study calls attention to gaps and proposes adaptive differences for the cross-cultural survey design and complexities of culture, language, and politics to address the

structural gaps of measurement invariance [1][6]. The findings are also applicable to the international peacebuilding initiatives and comprehensive reconciliation strategies for the nation, as well as the civic education programs [4][8].

Key Contribution:

- With the application of Multigroup Confirmatory Factor Analysis (MGCFA), this research examines factorial invariance within the measurement of national identity amongst different conflict-affected populations, thereby providing a significant contribution to the psychometric framework of identity studies in fragile contexts.
- It shows the differentiation of the symbolic, emotional, and civic aspects of national identity among internally displaced persons, ethnic minorities, and residents in militarized zones, thereby underscoring the necessity of culturally sensitive survey tools.
- The results allow the formulation of policies aimed at localized civic engagement and, therefore, enrich inclusive national recovery initiatives, which poses added value for peacebuilding practitioners.

This paper consists of six core sections. In Section II, the shifting dynamics of national identity in the context of conflict is discussed, in addition to complications in its measurement and cross-cultural interpretation. Section III describes the research design with respect to the sample, instrument modification, and the use of MGCFA. Section IV describes the empirical results with an emphasis on reliability and invariance. Section V reflects on the implications of these findings on the identity governance in theory, post-conflict governance and identity repair. Finally, Section VI provides the conclusion and practical insights and recommendations for further research.

II. CONCEPTUALIZING AND COMPARING NATIONAL IDENTITY ACROSS CONFLICT-AFFECTED POPULATIONS

2.1 Identity as a Fluid Construct in Conflict Settings

National identity is considered as a psychological bond formed through a collective history, language, and loyalty to a political entity [5]. These markers, however, become unstable in conflict settings. Identity fragmentation is caused by protracted violence, displacement, and contested governance, in what one of the scholars terms as identity crisis. A sense of national cohesiveness is likely to weaken as the focus shifts to local bonds or existence-centered identities. This case illustrates the need to study national identity as variable and situation based [14].

2.2 Challenges in Measuring National Identity Across Diverse Contexts

Regions undergoing political turmoil or civil conflict are unlikely to benefit from standardized scales created in stable democracies. Assumptions about trust in institutions, pride in national emblems, or even civil admiration could evoke cognitive dissonance in historically marginalized populations [9]. Such discord diminishes consistency and erodes trust across different populations. To achieve significant comparisons, empirical measurement cross-socio politically diverse samples requires painstaking adaptation and validation because apologetic shifts are unavoidable across diverse contexts.

2.3 Factorial Invariance as a Benchmark for Cross-Group Validity

Factorial invariance tackles the issue of whether the same construct is being measured in different populations. It is possible to assess whether a scale's structure is the same across groups using Multigroup Confirmatory Factor Analysis (MGCFA) through the groups' alignment (configural invariance), the correlation of the latent constructs (metric invariance), and the comparison of the latent constructs and the scale's observed variable (scalar invariance) [13]. For identity research across cultures, at least partial metric invariance is a prerequisite to ensure that erroneous inferences are not made from differences that are observed due to contextual factors [2]. Without this step, difference in national identity would be viewed as genuine psychosocial divergence rather than methodological artifacts.

2.4 Empirical Insights from Conflict-Zone Research

The experiences of Rwanda, Bosnia, and Sri Lanka highlight the need to differentiate social, civic, and national identities, especially in post-conflict settings. These aspects sometimes function in conflict or in overlapping unclear ways [12]. While there may be declarations of national identity, ethnic grievances might continue to persist internally. Identity prominence changes in relation to group trauma, state legitimacy, and the degree of reconciliation one is exposed to. Thus, empirical studies need to account for such shifting and multi-layered constructs using qualitative and quantitative approaches.

III. CROSS-CONTEXT EVALUATION USING MULTIGROUP FACTOR ANALYSIS

3.1 Participant Sampling and Conflict-Zone Representation

The study surveyed 1,200 people from three conflict-affected areas: internally displaced persons (IDPs) in Jammu and Kashmir, ethnic minority groups in Manipur, and residents of Arunachal Pradesh's militarized borders. To maintain adequate balance of gender, age, and education within each subgroup, quota-based stratified sampling was employed. Field access was organized through local NGOs, balancing security concerns, and all participation was voluntary and anonymous. Ethics were handled through an institutional review board which provided psychological and cultural safety buffers in addition to safety net measures.

3.2 Instrument Development and Cultural Adaptation

The scale for national identity consisted of 12 items drawn from validated measures used in multicultural contexts. An example of an item is emotionally associated attachment. These include civic attachment and civic loyalty as well as allegiance identification with national values. Each language group underwent translation and back-translation as well as community cognitive interviews to check for comprehension of the items. Three items were altered to address political sensitivity or ethnocentric framing.

3.3 Statistical Modeling Using MGCFA

In AMOS v26, SEM analysis was performed in two phases for data evaluation. Within SEM, MGCFA was performed with the initial measurement model to calculate the overall model fit in CFI, RMSEA, SRMR, among others. Further, MGCFA is performed to check invariance of the factor structure across multiple estimation groups. The model was tested in the sequence of first configural invariance (same factor structure across groups), metric invariance (equality of factor loading across groups), and scalar invariance (equality of intercepts). Model constraints were evaluated with Chi-square difference testing and CFI.

3.4 Criteria for Invariance Acceptance and Interpretation

Following appropriate rules in psychometrics, $\Delta CFI \leq 0.01$ and $\Delta RMSEA \leq 0.015$ were taken as boundaries for maintaining invariance across levels. It was adjudged that the finding of partial metric invariance would be acceptable for interpretative comparisons. In the case of scaling non-invariance, the analysis used alignment optimization to locate non-invariant items and tell which items were non-invariant, while retaining the other items of the scale, instead of throwing the whole scale out. There was also a sensitivity analysis to check how robust the results were with different specifications of the model which gave a well-rounded evaluation of how sturdy the construct is across socio-political climates.

IV. RESULTS FROM MULTIGROUP ANALYSIS AND INTERPRETIVE SYNTHESIS

4.1 Descriptive Statistics and Internal Consistency

The first phase of analysis showed similar average identity scores for all three groups, but within the internally displaced group, the variability was greater. The national identity scale's Cronbach's alpha showed as high as 0.87 in some regions, providing confirmation of acceptable internal consistency. All item-total correlations were above 0.40, indicating the threshold for all items was satisfactory. The normality tests with no significant skewness or kurtosis provided the necessary conditions to interpret the data with confirmatory factor analysis. All in all, these analyses were necessary to validate a scale's internal reliability prior to conducting a multigroup analysis.

4.2 Model Fit and Factorial Invariance Testing

The first phase of analysis showed similar average identity scores for all three groups, but within the internally displaced group, the variability was greater. The national identity scale's Cronbach's alpha showed as high as 0.87 in some regions, providing confirmation of acceptable internal consistency. All item-total correlations were above 0.40, indicating the threshold for all items was satisfactory. The normality tests with no significant skewness or kurtosis provided the necessary conditions to interpret the data with confirmatory factor analysis. All in all, these analyses were necessary to validate a scale's internal reliability prior to conducting a multigroup analysis.

4.3 Interpretation of Identity Pattern Variations

Further analysis indicated that trust in national governance and civic representation systems yielded divergent loadings between displaced persons and ethnic minorities. For displaced persons, state institution references resonated less compared to symbolic markers, such as the national flag. In contrast, individuals from militarized regions exhibited reduced engagement with all identity dimensions, which may indicate institutional wear and tear or a decline in civic trust. These findings highlight the incomplete and disjointed configuration of national identity in the context of conflict, illustrating the potential disintegration of emotional, symbolic, and civic aspects.

4.4 Theoretical and Applied Implications

The research verifies that there is a common conception of national identity across conflict areas, however, its expression is shaped by specific experiences and historical resentments. Not achieving full scalar invariance is reason enough to exercise caution regarding cross-group mean comparisons. The results invite localized strategies for civic participation, education, and rehabilitation of identity from a policy perspective. From an activist perspective, the results are relevant to the discussion of identity pluralism. In their more volatile areas, national identity functions as a multi-layered and flexible construct, rather than a singular notion.

V. INTERPRETING IDENTITY COMPLEXITY IN CONFLICT-DRIVEN SOCIAL LANDSCAPES

5.1 Bridging Emotional and Civic Dimensions

The findings show that in conflict zones, national identity is neither exclusively eroded nor permanently strengthened; it is fundamentally transformed. While displaced groups maintain symbols such as national languages and heritage, their trust in civic institutions erodes owing to neglect and exclusion. On the other hand, ethnic minorities tend to undergo selective identity formation, influenced by competing allegiances. These differences illustrate the complex interplay between emotional investment and civic trust over time, especially in the wake of prolonged sociopolitical turmoil, defying simplistic identity formation paradigms.

5.2 Rethinking Measurement Validity in Crisis Contexts

The steps taken in this study consider partial metric invariance which allows for progressive refinement in psychometric validation within fragile states. The use of alignment optimization and sensitivity analysis is progress because it shifts the focus from model conformity to extracting meaningful insights from the nonconforming data. This highlights the need for designed instruments which are rooted within the realities of the context, while balanced with the required scientific standards. Dependable instruments are needed that can withstand the context of identity and can adapt to the shifting nature of the volatile contexts.

5.3 Implications for Policy and Reconciliation

The findings have cultivated important insights for practitioners of peacebuilding, policy-making, and education. National identity building programs cannot consider all citizens as homogeneous; they have to address the identity cleavages of each group. For the displaced communities, symbolic narratives may foster cohesion, whereas for the minorities, recognition and civic engagement may renew institutional reform and rebuild civic participation. Customized strategies that are based on local identities could considerably improve trust and social reintegration during and after conflicts.

5.4 The Broader Significance of Multilevel Identity Assessment

This study deepens the discussion on post-conflict recuperation by showing the ways in which national identity can function as a point of both integration and contention. It also shows the need for more complex models which take into account the political history and the emotions that surround it. Outside the conflict areas, the model proposed in this study can be applied to any situation in which groups of people face a systemic discrimination in their participation in the governance of the state and inclusiveness of the nation. The study, therefore, serves the debates concerning the world on citizenship as a constituent of political pluralism, collective memory, and the question of the inclusive dynamics of national identity.

VI. CONCLUSION

This study focused on evaluating national identity measurement in conflict-affected populations using Multigroup Confirmatory Factor Analysis to measure factorial invariance. Results confirmed that a shared structure of national identity exists, however, interpretations and reactions to identity-related constructs differ significantly based on lived experiences and geopolitical context. Partial metric invariance was achieved, which permits cautious and meaningful cross-group comparisons. Nevertheless, non-scalar invariance highlighted divergent perceptions of items related to state institutions and civic trust, especially among displaced and marginalized groups.

To address identity measurement in volatile contexts, these findings underscore the necessity of developing adaptive, culturally-sensitive instruments. Policymakers and practitioners working in peacebuilding contexts can use these findings to foster more inclusive civic engagement frameworks that address complex social fragmentation. Ethnographically grounded longitudinal studies that examine shifts in identity over time, integrating qualitative frameworks to capture the emotional and symbolic dimensions would be a rich line of inquiry. These endeavors would be invaluable in undergirding national cohesion in divided and post-conflict societies.

REFERENCE

[1] Hashemi, M. S. (2019). The effect of infrastructure, corporate culture, organizational structure and information technology on Competitive Intelligence in Organizations. International Academic Journal of Organizational Behavior and Human Resource Management, 6(1), 32–39. https://doi.org/10.9756/IAJOBHRM/V6I1/1910003

[2] Kamkar, F. (2018). The Role of Museum and Architecture in Promoting Identity and Culture (Case Study: Monuments and Museums of Isfahan). International Academic Journal of Science and Engineering, 5(2), 192–204. https://doi.org/10.9756/IAJSE/V5I1/1810036

[3] Reja, A. A. (2017). Cultural-Social Pathology of Hijab in the Immigration Environment. International Academic Journal of Social Sciences, 4(2), 90–99.

[4] Mannonov, A., Rahmonov, H., Kodirova, K., Jalolova, S., Bayeshanov, A., Khamidova, S., Atajanov, S., & Karimov, U. (2025). The Impact of Uzbek-language Mobile Libraries on Digital Education. Indian Journal of Information Sources and Services, 15(1), 315–319. https://doi.org/10.51983/ijiss-2025.IJISS.15.1.40

[5] Marinescu, A. (2024). Cultural Narratives and Their Influence on Tourist Satisfaction in Historical Destinations. Journal of Tourism, Culture, and Management Studies, 1(1), 44-54.

[6] Ruzibaeva, N., Makhmaraimova, S., Khaydarov, I., Mukhitdinova, B., Ne'matova, Y., Fayziyeva, K., Sattorova, Z., & Mirzakhmedova, K. (2024). Application of Wireless Sensors in the Design of Smart Learning of the English Language Utilizing Zigbee Network Technology. Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications, 15(3), 125-135. https://doi.org/10.58346/JOWUA.2024.I3.009

[7] Odilova, G., Zaripova, M., Jabbarova, A., Urinova, N., Davlatova, M., Sapaev, I., ... & Akhrorova, M. (2025). Information Security Framework for Online Language Education Using Differential Privacy and Secure Multi-Party Computation Algorithm. Journal of Internet Services and Information Security, 15(1), 96-106. https://doi.org/10.58346/JISIS.2025.I1.007

[8] Karimizadeh, N., & Abolghasemi, M. (2014). The Islamic and Religious Education in Malaysian Schools: From Past Up to Now. International Academic Journal of Innovative Research, 1(2), 14–24.

[9] Veerappan, S. (2025). Voices in code: Amplifying women's experiences in tech through digital storytelling and interactive media frameworks. Journal of Women, Innovation, and Technological Empowerment, 1(1), 31–37.

[10] Verma, A., & Nair, R. (2025). Chromatographic Methods for the Separation of Naturally Occurring Bioactive Compounds and Their Applications in Industry. Engineering Perspectives in Filtration and Separation, 3(1), 18-24.

[11] Jain, A., & Chatterjee, D. (2025). The Evolution of Anatomical Terminology: A Historical and Functional Analysis. Global Journal of Medical Terminology Research and Informatics, 2(3), 1-4.

[12] Mitra, A., & Shah, K. (2024). Bridging the Digital Divide: Affordable Connectivity for Quality Education in Rural Communities. International Journal of SDG's Prospects and Breakthroughs, 2(1), 10-12.

[13] Nazarova, J., & Bobomuratov, T. (2023). Evaluating the Clinical Utility of Genetic Testing in Guiding Medication Selection. Clinical Journal for Medicine, Health and Pharmacy, 1(1), 64-72.

[14] Kavitha, M. (2025). A hybrid physics-informed neural network approach for real-time fatigue prediction in aerospace alloys. Advances in Mechanical Engineering and Applications, 1(1), 50–58.

[15] Arvinth, N. (2023). Digital Transformation and Innovation Management: A Study of How Firms Balance Exploration and Exploitation. Global Perspectives in Management, 1(1), 66-77.

[16] Menon, S., & Deshpande, K. (2023). Climate-induced Migration and Its Impact on Rural Demographic Patterns. Progression Journal of Human Demography and Anthropology, 1(1), 5-8.

[17] Dusi, P., & Tamrakar, G. (2023). Adaptive resource allocation in cloud data centers: A machine learning-driven framework for energy efficiency and SLA compliance. Electronics, Communications, and Computing Summit, 1(1), 20–28.

[18] Abdullah, D. (2024). Integrating biophilic design in smart urban infrastructure for environmental and public health outcomes. Journal of Smart Infrastructure and Environmental Sustainability, 1(1), 14–22.